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# **FY2021-FY2025 CIP**

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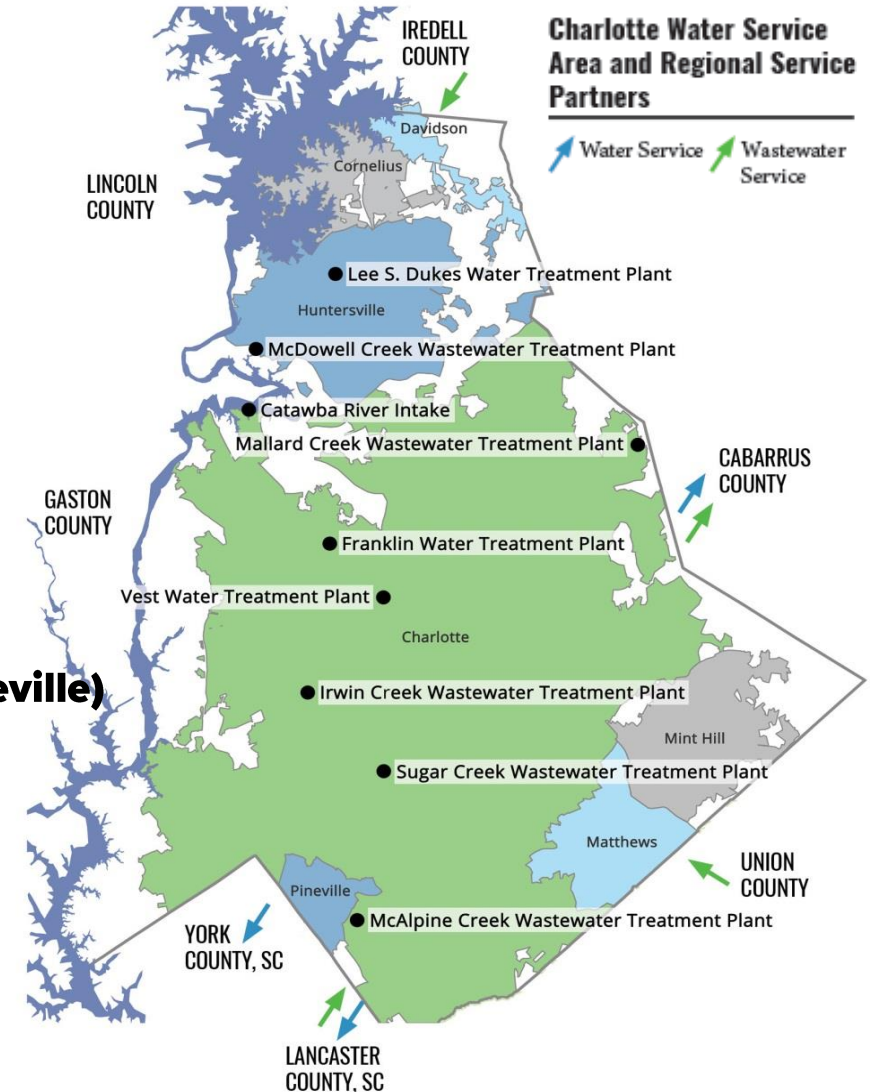
# Today's Outline

- **Charlotte Water by the Numbers**
- **CIP Development and Goals**
- **FY21-FY25 CIP Breakdown**
- **Upcoming Opportunities to Work with Charlotte Water**
- **Questions**



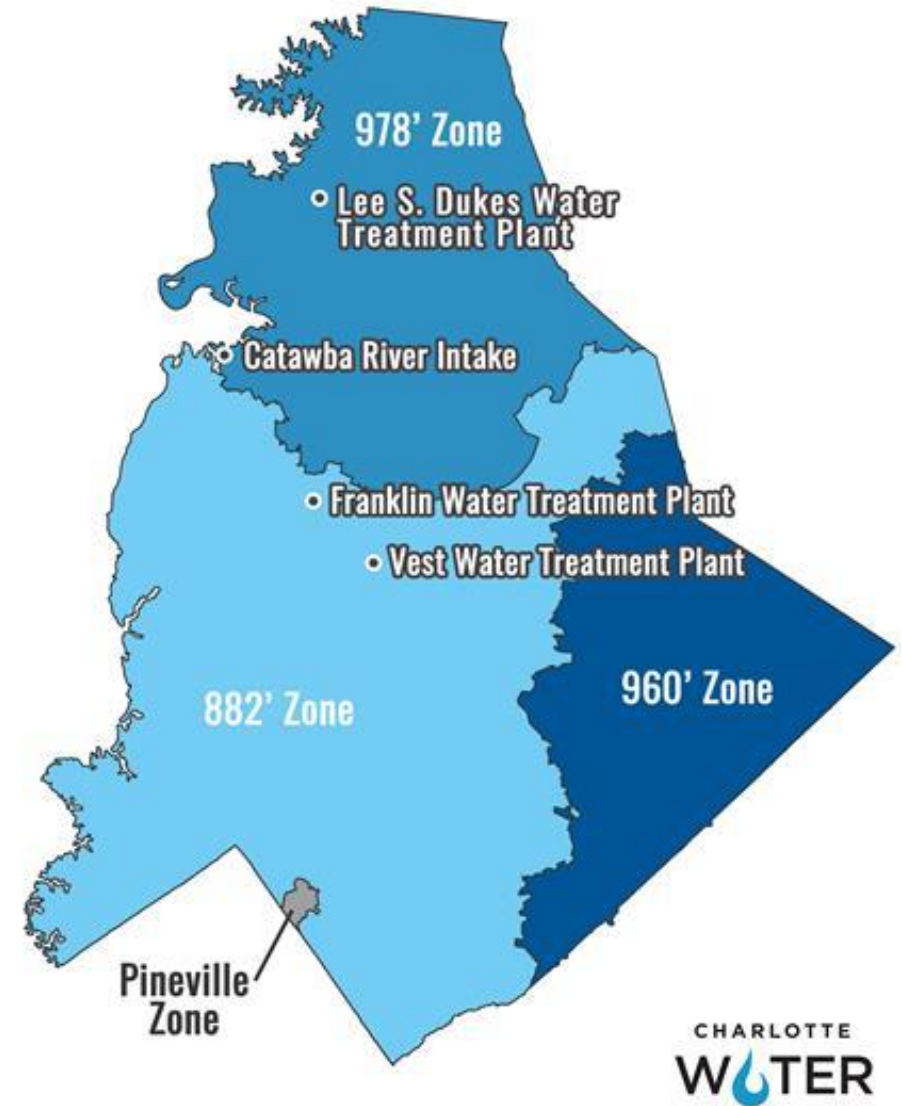
# Charlotte Water by the Numbers

- 2 Drinking Water Supply Intakes**
- 2 Raw Water Reservoirs**
- 3 Drinking Water Treatment Plants**
- 4 Field Operations Facilities**
- 7 Wastewater Treatment Plants (Owned & Operated)**
- 8 Governments Served (Mecklenburg County, Town of Davidson, Town of Cornelius, Town of Huntersville, City of Charlotte, Town of Mint-Hill, Town of Matthews, Town of Pineville)**
- 17 Staffed Facilities**
- 83 Wastewater Lift Stations**
- 997 Full-time Positions**



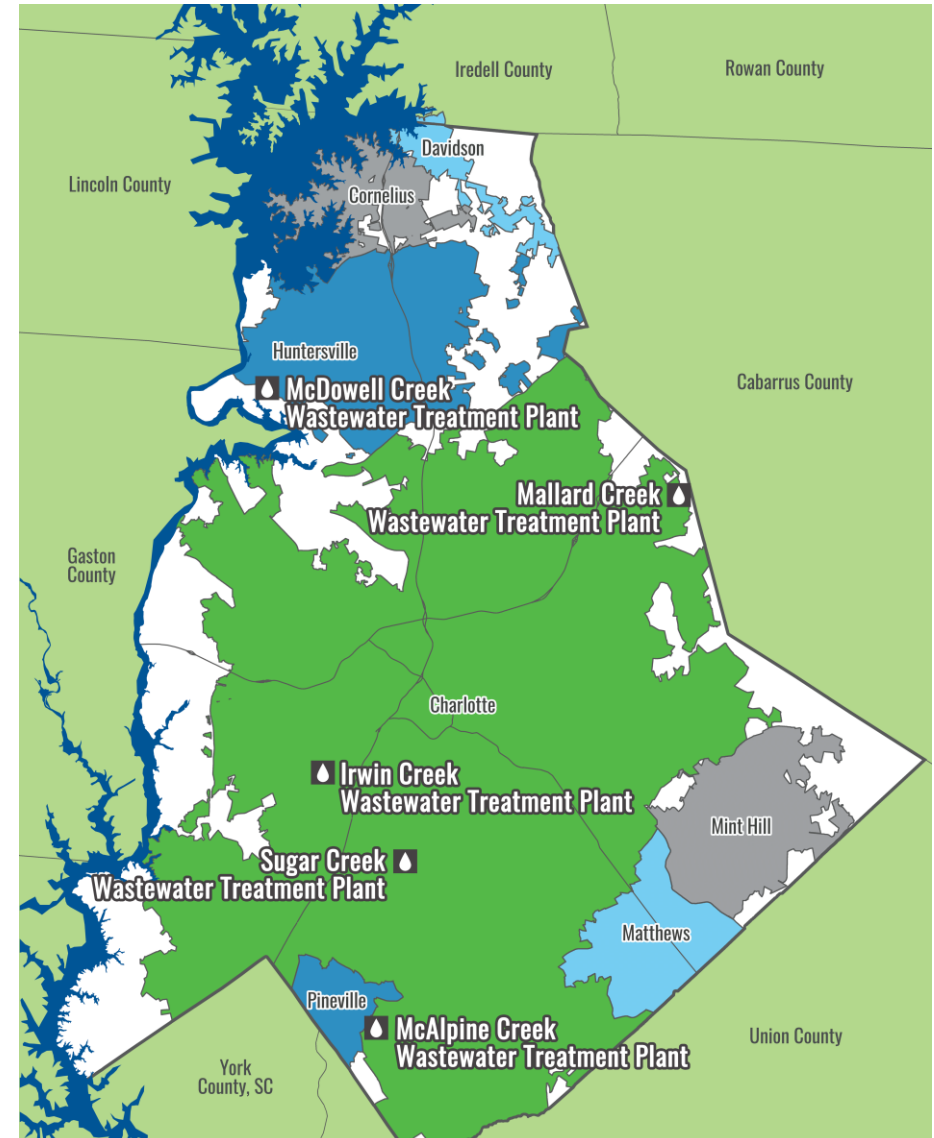
# Water System Facts

- ▶ **3 WTP**
- ▶ **174 MGD Design Capacity**
- ▶ **109 MGD Average Pumped**
- ▶ **4 Pressure zones**
- ▶ **17 BPS and EST/Storage**
- ▶ **4,431 miles of Water Mains**
  - 1 to 120" inch
- ▶ **297,098 Active Water Connections**
- ▶ **17,677 hydrants Maintained**



# Sanitary Sewer Facts

- ▶ **5 WWTPs**
- ▶ **2 Packaged Plants**
- ▶ **123 MGD of Wastewater Treatment Capacity**
- ▶ **89 MGD Average Treatment**
- ▶ **4,420 miles of sewer pipe**
  - 1-½ to 96 inch
- ▶ **83 sanitary sewer pump stations**
- ▶ **270,640 Active Wastewater Connections**



# Vital Component of the Community

## WATER

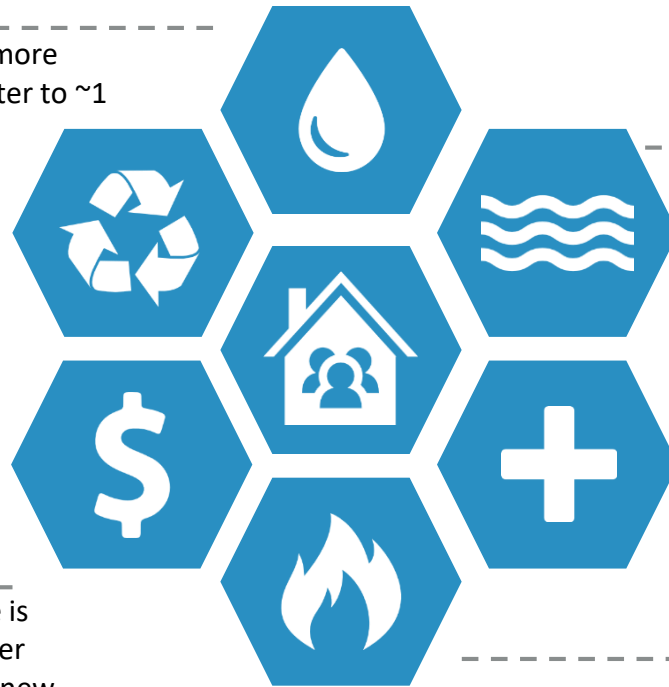
Charlotte Water supplies, on average, more than 108 million gallons of drinking water to ~1 million people daily.

## ENVIRONMENTAL PROTECTION

Sanitary sewer overflows (SSOs) have reduced by 33% in the last 5 years, but more work is needed to protect the environment by further reductions.

## ECONOMIC DEVELOPMENT

All economic development in Charlotte is contingent on a reliable water and sewer system with capacity to accommodate new homes and businesses.



## WASTEWATER

Charlotte Water collects and treats ~90 million gallons of wastewater each day and regulates discharges from ~60 industrial customers.

## PUBLIC HEALTH

In FY21 Charlotte Water performed more than 195,000 laboratory analyses to ensure consistent, high quality drinking water.

## FIRE PROTECTION

Every new customer and mile of pipe added increases maintenance, operations and workload including maintaining the more than 17,000 hydrants.

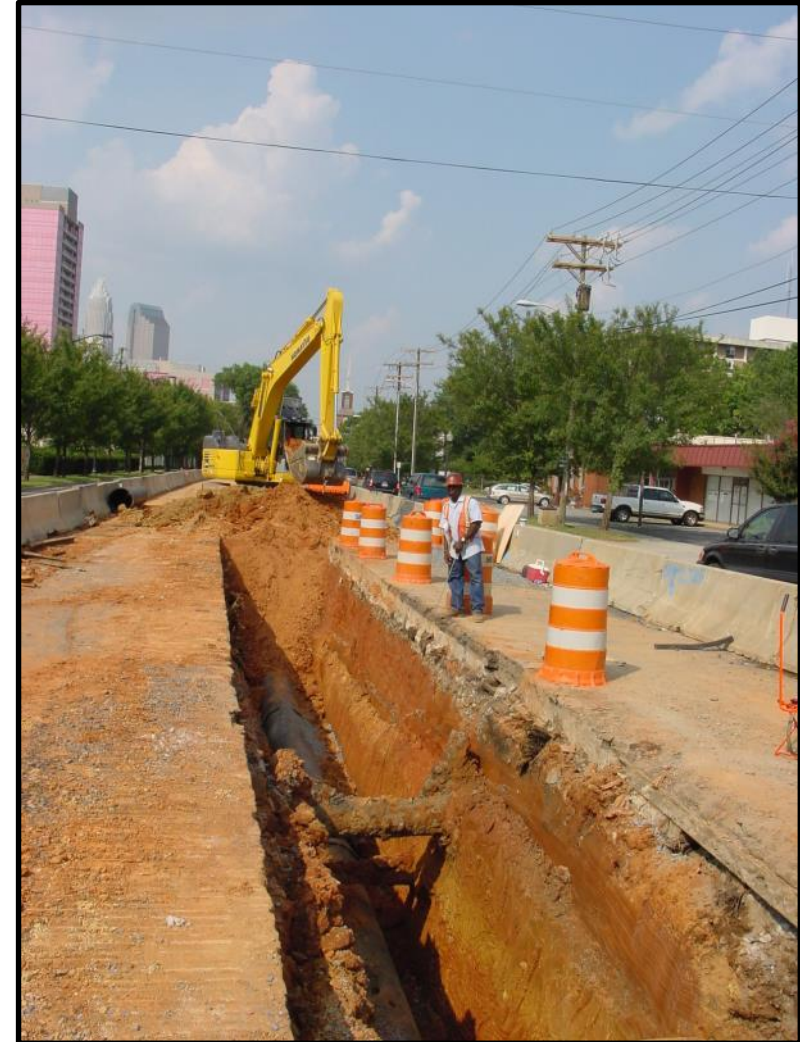
# CIP Goals

- **Identify the right projects**
- **Identify long term project funding needs**
- **Maintain consistent annual capital funding level**
- **Ensure financial viability**
  - **Balancing the goals against supporting municipal vision plans, economic development and regulatory requirements**



# How Do We Categorize Projects and Programs?

- **CIP Categories:**
  - Regulatory Requirements
  - Capacity for Growth
  - Rehabilitation and Replacement
  - Commitment to Public Projects and Utility Operations





# FY21-25 CIP Breakdown



# FY21-25 CIP Breakdown

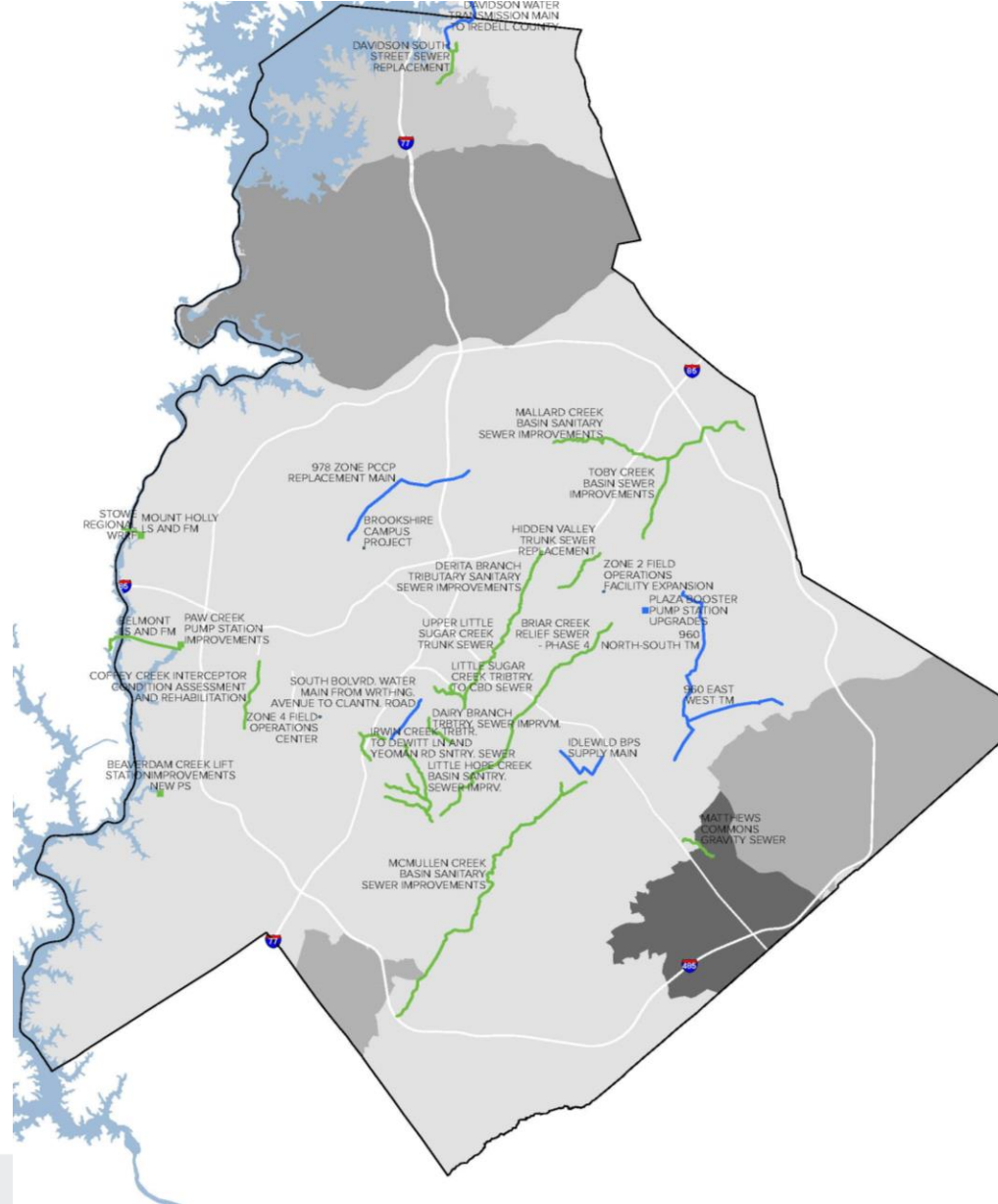
	Water	Wastewater
<b>Projects &amp; Programs</b>	<b>52</b>	<b>69</b>
<b>FY21-FY25 Totals</b>	<b>\$431.4M</b>	<b>\$1.36B</b>
Treatment Plant	\$69.9M	\$603.4M
Pipelines	\$343.1M	\$700.3M
Planning	\$2.0M	\$51.7M
Facilities, Operational Support – 16 Projects & Programs		\$169M

**Overall FY21-25 - \$1.94B**

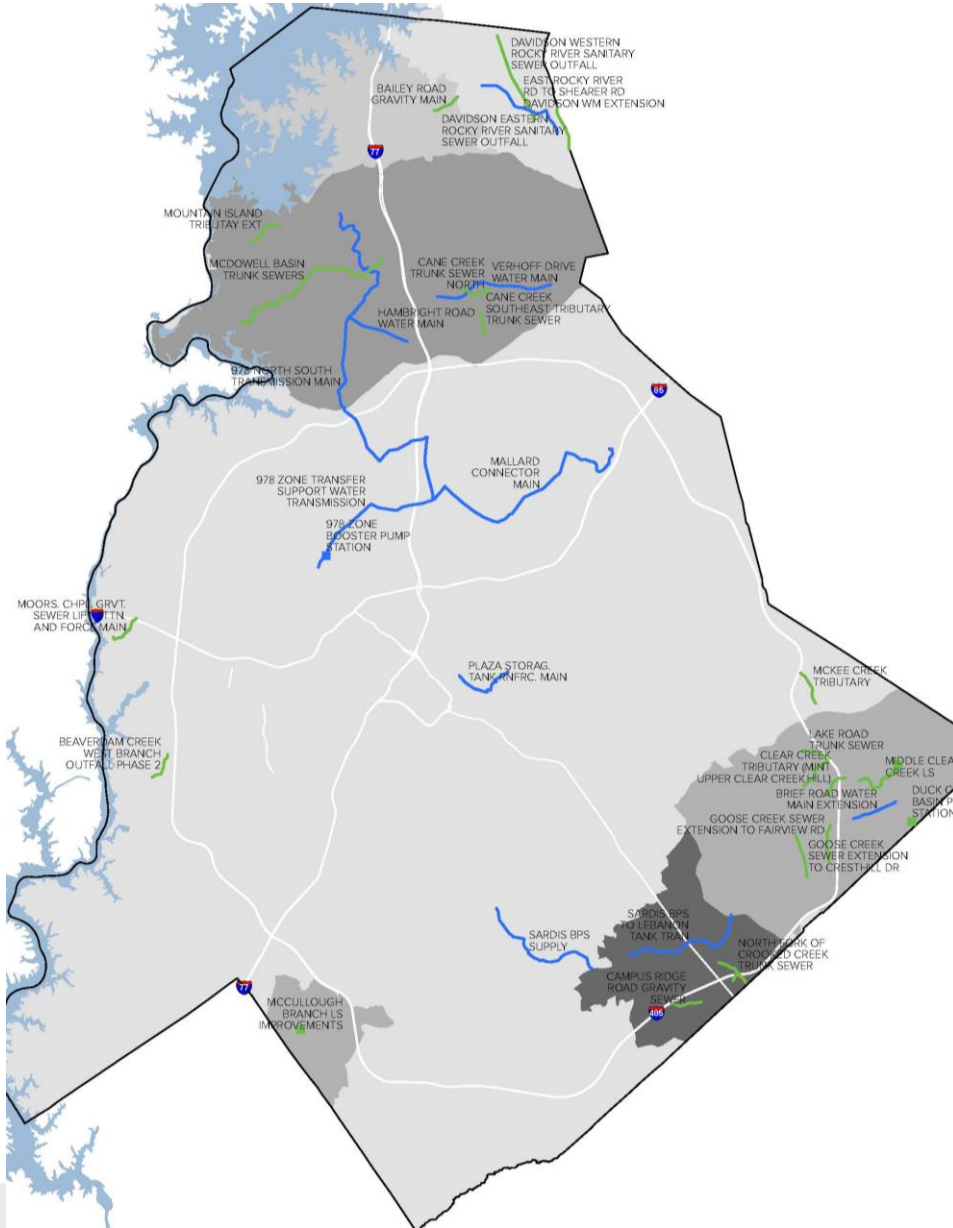
# FY21-25 CIP HANDOUT

Project ID	Project Title	FY21	FY22	FY23	FY24	FY25	Total 5-YR	10-YR	Total 10-YR
<b>Water Projects</b>									
99W88	New Service Installations - Water	\$17,500,000	\$17,500,000	\$17,500,000	\$17,500,000	\$17,500,000	\$87,500,000	\$87,500,000	\$175,000,000
99W04	Major Water Main Repl & Rehab	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000	\$75,000,000	\$105,000,000	\$180,000,000
20W05	South Boulevard Water Main from Worthington Avenue to Clanton Road	\$5,000,000	\$0	\$0	\$0	\$0	\$5,000,000	\$0	\$5,000,000
99W19	Street Main Extension - Water	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$25,000,000	\$25,000,000	\$50,000,000
20W10	NC DOT Widening - Water	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$20,000,000	\$28,000,000	\$48,000,000
99W09	Water Lines For Street Improvement	\$3,500,000	\$3,500,000	\$3,500,000	\$3,500,000	\$3,500,000	\$17,500,000	\$25,000,000	\$42,500,000
16W23	Water Meter Program	\$3,300,000	\$3,300,000	\$3,300,000	\$3,300,000	\$3,300,000	\$16,500,000	\$16,500,000	\$33,000,000
19W01	Water Dist Design & Reliability Improvements	\$3,000,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000	\$21,000,000	\$0	\$21,000,000
21W02	Water Transmission Improvement	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$15,000,000	\$15,000,000	\$30,000,000
15W08	WTP Rehab & Upgrades	\$2,200,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$12,200,000	\$12,500,000	\$24,700,000
03W15	Valve Rehab and Replacement	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$10,000,000	\$15,000,000	\$25,000,000
16W15	Vest Station Rehab/Upgrade	\$2,000,000	\$0	\$0	\$0	\$0	\$2,000,000	\$0	\$2,000,000
21W01	Franklin WTP Filters 1-12 Rehab	\$2,000,000	\$0	\$0	\$0	\$0	\$2,000,000	\$0	\$2,000,000
00W03	Catawba Pump Station Rehab/Upgrade	\$2,699,999	\$0	\$0	\$0	\$0	\$2,699,999	\$0	\$2,699,999
06W03	Dukes WTP Generator	\$1,000,000	\$0	\$0	\$0	\$0	\$1,000,000	\$0	\$1,000,000
16W08	Catawba River Water Pump Station Cell 4 - Pump Addition	\$1,000,000	\$0	\$0	\$0	\$0	\$1,000,000	\$3,000,000	\$4,000,000
20W03	Shaw-Blount Reservoir Pump Station Upgrade	\$1,000,000	\$0	\$0	\$0	\$0	\$1,000,000	\$1,700,000	\$2,700,000

# FY21-25 FUNDED CIP MAP



# FY21-25 UNFUNDED CIP MAP



# **Opportunities within Treatment Plant Rehab and Operations Support**

# Sugar & Irwin WWTP UV Replacement (17S09) Estimate: \$6.5M, 3rd Quarter 2021



Replacement of UV Disinfection Systems at Sugar and Irwin Plants.

## Subcontracting Opportunities:

- Demolition
- Concrete
- Hauling
- Electrical
- Excavation
- Site Preparation

## Contacts:

HDR- Brian Thorsvold

704-338-6700

CLTWater

Tony Martin

704-336-1053



# **McAlpine Creek WWTP Biosolids Improvements (15S07 & 17S08) Estimate: \$13M – 3rd Quarter 2021**



Replacement of Process  
Mechanical Systems.

## Subcontracting Opportunities:

- Demolition
- Concrete
- Hauling
- Electrical
- HVAC

## Contacts:

HDR- Brian Thorsvold  
704-338-6700  
CLTWater  
Kit Eller  
704-336-1031

# Roofing Replacement Program (18S13 & 18W25)

## Estimate:\$3.5M 1st Quarter 2021



Roofing Replacements at multiple treatment facilities

### Subcontracting Opportunities:

- Demolition
- Plumbing
- Masonry

### Contact:

CLTWater

Tony Martin

704-336-1053

# Catawba Pump Station Rehabilitation (00W03)

## Estimate: \$15M, 2nd Quarter 2021



Upgrade of existing pump station. Primarily medium voltage electrical.

### Subcontracting Opportunities:

- Demolition
- Erosion Control
- Architectural Coatings
- Window Replacements

### Contacts:

Southeastern Electrical  
Consulting Engineers  
Mike Dougherty 704-572-8347

CLTWater  
Tony Martin 704-336-1053



# Irwin WWTP Reliability Improvements (15S01) Estimate: \$3M, 2nd Quarter 2021



Concrete Repair, New Bar Screen,  
Grit System modifications, Roofing,  
Flow Metering

## Subcontracting Opportunities:

- Demolition
- Concrete
- Hauling
- Electrical
- Excavation
- Site Preparation

## Contacts:

Brown and Caldwell

Jay Fulmer 704-373-7119

CLT Water

Brian Pate 704-336-1067

# Zone 2 Vacuum Receiving Station (17S01)

## Estimate: \$3M, 1st Quarter 2021



New Debris Sorting and Hauling Station

### Subcontracting Opportunities:

- Demolition
- Concrete
- Hauling
- Electrical
- Excavation
- Site Preparation

### Contact:

CLTWater

Brian Pate 704-336-1067



# Ashe Plantation Upgrades – Ph II

## Estimate: \$1M, 2nd Quarter 2021



Structural, mechanical, and electrical upgrades to a package wastewater treatment plant.

### Subcontracting Opportunities:

- Demolition
- Concrete
- Hauling
- Electrical
- Excavation
- Site Preparation

### Contact:

CLTWater

Chuck Cowherd 704-336-1023

# Field Operations Zone 4 Facility

## Rodgers Builders (CMAR) (20M08)

### Estimate: \$40M 1st Quarter 2021



New Office, Maintenance and Warehouse Facility

#### Subcontracting Opportunities:

- Electrical
- HVAC
- Plumbing
- Masonry
- Roofing
- Site Improvements
- etc.

#### Contact:

Rodgers Builders (CMAR) Armando Perez 704-634-7701

CLTWater  
Tony Martin 704-336-1053



# Miscellaneous Treatment Plant Rehabilitation Projects (15S01 & 15W01)



Small, quick rehab and emergency projects at all water and wastewater plants

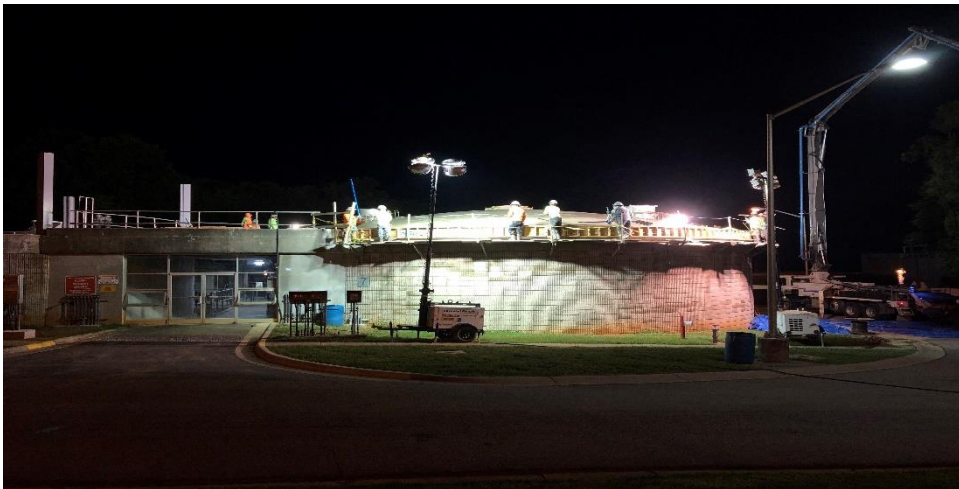
## Subcontracting Opportunities:

- Electrical
- HVAC
- Plumbing
- Masonry
- Roofing
- Site Improvements
- etc.

## Contact:

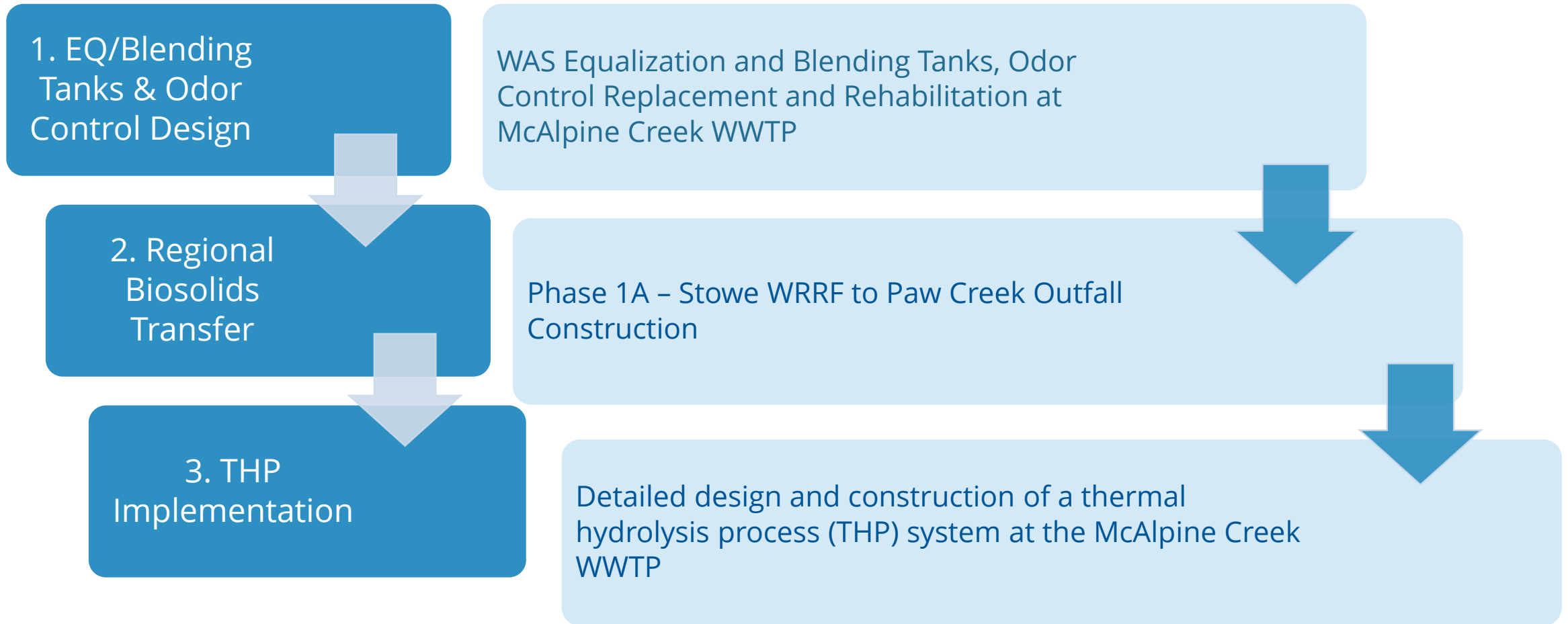
CLTWater

Jeff Davis 704-336-1026



# **Opportunities within Project Management**

# Upcoming Projects/Phases within the Biosolids Program



# McAlpine Creek WWTP EQ/Blending Tanks and Improvements

- ▶ **Construction Cost: Approximately \$23M**
- ▶ **Advertise Construction Contract – Spring 2021**
- ▶ **Construction Schedule: Summer 2021 – Winter 2022**
- ▶ **Scope of Work:**
  - Construction of new equalization (EQ) tanks, pumping and mixing for waste activated sludge (WAS) and blending tanks for WAS and primary sludge (PS).
  - Installation of a new screen and compactor at the existing primary solids receiving station.
  - Rehabilitation of existing odor control systems (Headworks and CIPS area)





# McAlpine Creek WWTP THP Implementation Phase 1

## ► Final Design Schedule:

- RFQ in Spring 2021
- Design - Summer 2021 – Summer 2023

## ► Construction Schedule: Summer 2023 – Summer 2026

## ► Scope of Work:

- Pre-Dewatering/Screening Building (pre-THP) with odor control facility
- THP System and supporting facilities.
- Improvements to existing anaerobic digestion systems, dewatering complex and yard piping.

## ► Status:

- PER is currently being developed.



# Mallard Creek WWTP Rehabilitation, Expansion and Solids Improvement

## ► Phase 1A Improvements : New Blower Building and Aeration Improvements Construction

- Construction Cost: Estimated \$6M - Adv Fall of 2020

## ► Phase 1 Improvements : WWTP Rehabilitation, Expansion, Odor Control and Solids Improvements Detailed Design

- Construction Cost: \$85M
- RFQ for a CMAR in Fall of 2020

## ► Schedule:

- Phase 1A Construction: Early 2021 to Late 2021
- Phase 1 Detailed Design: Fall 2020 to 2022
- Phase 1 Construction: 2022 to 2026

## ► Scope of Work:

- Phase 1A: Construction of new Blower Building, blower installation and aeration improvements to increase capacity from 12 mgd to 13.1 mgd.
- Phase 1: Per and detailed design of plant rehabilitation and expansion improvements, including new screening facilities, new influent pumping station and new EQ basin, for expansion to 14.9 mgd, solids handling improvements, and odor control

## ► Status:

- Phase 1A currently in Detailed Design
- Phase 1 currently in PER





# Mallard Creek Basin Sewer Rehabilitation(Phase 1) Construction and Interceptor (Phase 2) Design-Build Project

## ► Construction Cost: Estimated \$67M for Ph 2

## ► Project Schedule:

- Design Build RFQ: Winter 20/21
- Phase 1 Rehabilitation Design Complete– Spring 2021
- Estimated Phase 1 Rehabilitation Construction by DB Team in 2021/22
- Estimated Phase 2 Interceptor Design and Real Estate : 2021 to 2022
- Estimated DB Ph 2 Construction: 2023 to 2024

## ► Scope of Work:

- Phase 1 Rehabilitation of Mallard Creek Basin Sewer pipes and manholes
- Phase 2 Design and construction of sewer interceptor from the Mallard Creek WWTP to Toby Creek.

## ► Status:

- Planning and alternatives analysis.





# McMullen Creek Interceptor Rehabilitation Construction

► **Construction Cost: Estimated \$9.3 M**

► **Project Schedule:**

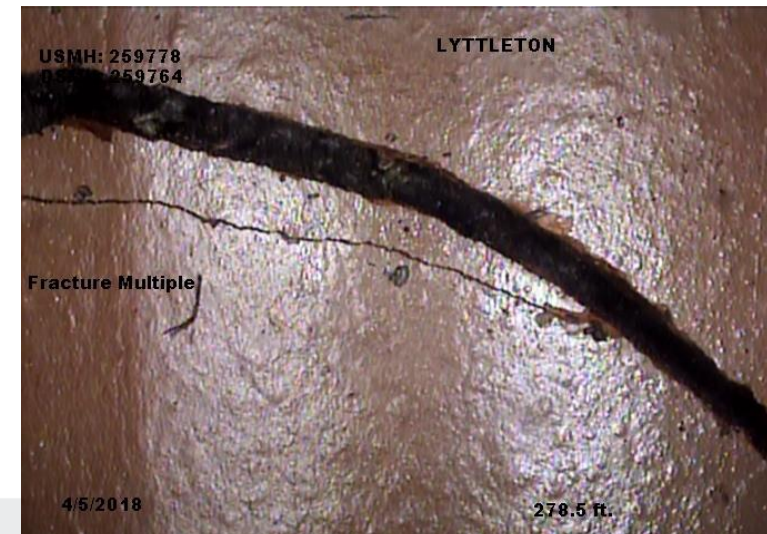
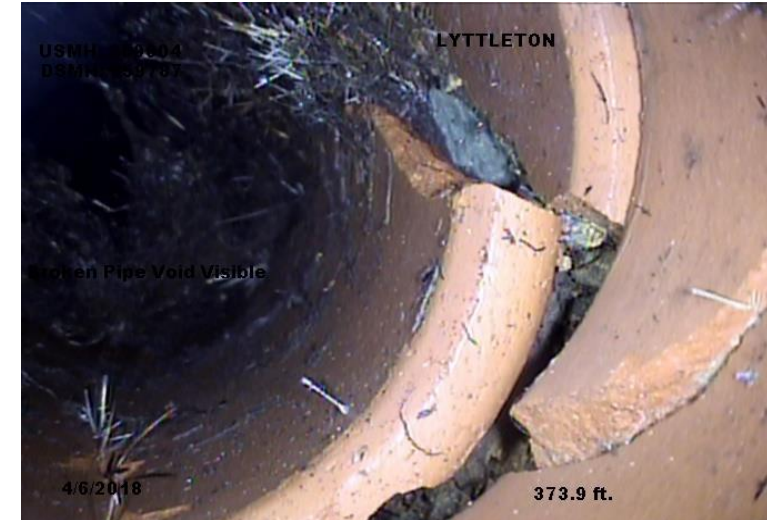
- Advertise Construction in Winter 20/21
- Construction: 2021 to Early 2023

► **Scope of Work:**

- Rehabilitation of sewer pipes and manholes within the McMullen Basin.

► **Status:**

- *Bidding Documents in development.*



# Clarks Creek Pumping Station Improvements

## ► Construction Cost: Estimated \$2.2M

## ► Project Schedule:

- Construction Procurement: Fall 2020
- Construction Schedule: 2021 to 2022

## ► Scope of Work:

- Replace existing Clarks Creek Pumping Station with a new submersible type pump station including a wet well, submersible pumps, controls building, electrical equipment, and instrumentation/controls equipment. The existing wet well will be repurposed to house a new grinder.
- Install new water service for the Pump Station from the 16" main on Ramah Church Road and abandon existing well

## ► Status:

- *90% Design*

# Stowe Regional WRRF – Access Roads

- ▶ **Traditional Delivery, Hard Bid**
- ▶ **Advertisement: Late Fall 2020**
- ▶ **Estimated Substantial Completion: End CY 2021/Early CY 2022**
- ▶ **Current Scope of Work:**
  - Construct two access roads and associated bridges for the proposed Stowe RWRRF in Western Mecklenburg County
  - Northern Route: 5,050 LF access route, Approx. 200 LF Bridge over Long Creek
  - Southern Route: 650 LF access route, Approx. 241 LF Bridge over Long Creek
  - Associated site work, fencing, lighting, etc.
  - Approx. 5,000 LF 8” or 12” waterline and associated appurtenances

CHARLOTTE WATER

**Stowe Regional**  
Water Resource Recovery Facility

# Belmont Lift Station and Force Mains

▶ **Progressive Design Build Project Delivery**

▶ **Project Cost: \$35M+**

▶ **Design & Construction Schedule: Summer 2021 – End 2024**

▶ **Scope of Work:**

- Design & Construct a lift station and pipeline to bring Belmont's wastewater to Charlotte Water's collection system
- Status
  - Procurement process to begin in early 2021



# Briar Creek Ph. 4

- ▶ **Budget: \$10.5 M**
- ▶ **Advertise Construction – Fall 2020**
- ▶ **Completion Date: 2021**
- ▶ **Scope of Work:**
  - Pipeline rehabilitation to the 70's wastewater line through cured in place pipe lining.
  - Manhole rehabilitation
  - Small sewer diversion to relief flow from a portion of the 70's line to 20's line.



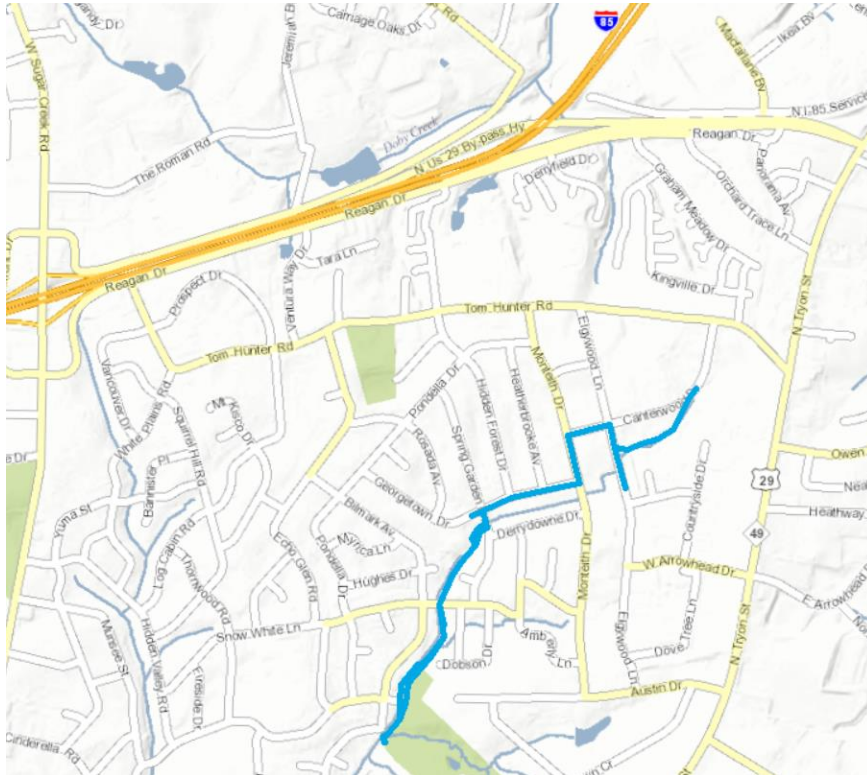


# Site Improvements at Charlotte Water's Field Operations, Zones 1 & 2

- ▶ **Budget: \$1.5 M**
- ▶ **Advertise Construction – Fall 2020**
- ▶ **Completion Date: 2021**
- ▶ **Scope of Work:**
  - Paving a gravel lot, concrete work, running a water and sewer line, making modifications to the storm drainage and detention pond.



# Hidden Valley Trunk Sewer Replacement Phases 2 & 3



Construction of approximately 6,100 LF of 15 and 18 inch sewer. Project is located in the Hidden Valley neighborhood in NE Charlotte.

Advertise Construction Fall 2020

## Subcontracting Opportunities:

- Clearing
- Erosion Control
- Hauling
- Fencing
- Seeding

## Contact:

- Frazier Engineering  
Mark Lambert 704-822-8444
- CLTWater  
Matt Bedford 704-336-1009



## ► **QUESTIONS?**

Bhavana Swayampakala, PE / *Division Manager – Planning*  
P:704-336-4976 / [bhavana.Swayampakala@charlottenc.gov](mailto:bhavana.Swayampakala@charlottenc.gov)

Jeff Davis, PE / *Division Manager – Treatment Plant Rehab and Operations Support*  
P:704-942-6943 / [Jeff.Davis@charlottenc.gov](mailto:Jeff.Davis@charlottenc.gov)

Chuck Bliss, PE / *Division Manager – Project Management*  
P:704-336-1012 / [CBliss@charlottenc.gov](mailto:CBliss@charlottenc.gov)

Frederica Love/ *Business Diversity Lead*  
P:704-336-1051 / [flove@charlottenc.gov](mailto:flove@charlottenc.gov)



